

## WEB APPLICATION FOR MATHEMATICS CLUB OF P.C.E

P.J Suryawanshi<sup>1</sup>, Pallavi Gurve<sup>2</sup>, Yashasvi Patha<sup>3</sup>, Shubham Singh<sup>4</sup>, Saumya<sup>5</sup>

<sup>1</sup>Professor, Dept. of Computer Technology, Priyadarshini College of Engineering, Maharashtra, India

<sup>2</sup>Student, Dept. of Computer Technology, Priyadarshini College of Engineering, Maharashtra, India

<sup>3</sup>Student, Dept. of Computer Technology, Priyadarshini College of Engineering, Maharashtra, India

<sup>4</sup>Student, Dept. of Computer Technology, Priyadarshini College of Engineering, Maharashtra, India

<sup>5</sup>Student, Dept. of Computer Technology, Priyadarshini College of Engineering, Maharashtra, India

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**Abstract**— The project was created for the PCE Mathematics Club to elect club members, conduct tests, provide study materials, and hold virtual meetings, among other things. It will serve as a one-stop shop for kids studying for a variety of competitive tests that need math and aptitude. This system is responsible for the design and construction of a web-based all-purpose site that will provide the official site with high performance and security. It will include a chatbot, a voting system, a blog page, study material, a quiz panel with face and speaker search, a certificate area, and a virtual meet. Students will be able to find all they need in one area, including study materials, sample question questions, test series, and more. This site will also be used to elect club members in a democratic manner. Exams will be fair, with facial and voice recognition, eliminating the possibility of cheating. This site can even be utilised as a meet application instead of using a different platform for webinars.

**Keywords**—web applications, classrooms, performance, college of education, chatbot, maths club.

### I. INTRODUCTION

The goal of a chatbot is to create a conversation between a human and a machine. The machine has been programmed with the ability to recognise sentences and make decisions on its own as a response to an inquiry. Chatbots will have a message user interface that allows users to type instructions and receive texts as well as text-to-speech responses. In order to give functionality, chatbots are usually domain specific services that remember past commands. When chatbot technology is connected with major web services, it may be used safely by a much larger audience. Artificial algorithms will be used to build the college inquiry chatbots, which will assess user queries and understand their messages. The response premise is to match the user's input statement. The user can use the chat-bot to ask questions about any college-related events without having to physically visit the campus. After analysing the question, the system responds to the user. The technology uses artificial intelligence to respond to the questions posed by the pupils. As though a real person were speaking to the user, the

system responds with an effective Ui. The user only needs to create an account and log in to the system. The chatbots are made up of a core and an interface that accesses the core (MySQL). The content of the complaint is parsed, tokenized, stemmed, and filtered using natural language processing tools.

ERP management is a web-based programme. It makes the use Android-based smartphones as well as computer online services. The main purpose is to design an application that provides learners with knowledge on complaints, placement events, general announcements, and pertinent notices from across all departments in a smart and simple way. The software is available to four types of users: students, teachers, H.O.D.s, and principals. Each matter of practice will have its own application view that is suited to their own requirements. The World wide web Web have transformed the accessibility of today's internet world of technology, as well as the user's right to act on that information.

And computers and electronic gadgets often have a greater impact on our lives than we are likely to realise, such as computerised administration, data storage from education schools, universities, and an endless list of other applications. He goes over the details of a student, employee, worker, and so on to see if management requires the information. It's difficult to organise the administrative work required to gather information on all students, educators, and other stakeholders. College systems are a comprehensive solution for a college's online management, i.e., a more effective tool for coordinating a college's day-to-day activities. The majority of the college campus follows an annual process in the new structure to keep notes and other materials.

In light of the new framework's emphasis on contemplation, it's clear that the student must connect directly with the office on a daily basis, be brief in their requests, and so on. Both of these things require more time and work. The suggested Wireless Smart Campus framework is completely automated. The Smart Campus is available as a smartphone app and a web app. It makes use of Android cellphones as

well as web services on computers. The major purpose is to establish and communicate with students regarding grievances, placement practises, general notifications, and important notices from all departments. The fundamental goal of Smart Campus expansion is to give an easy approach to not only automate all of a college's operations, but also to supply the college's top authority with the most up-to-date information on every aspect of the college.

## II. RELATED WORK

"Highly Secured Online System Of voting via Network" is described in [1]. The author's goal is for people with Indian citizenship who are above 18 years old and of any gender to be able to vote online instead of visiting to a physical polling location. Election Commission Officer to engage in online voting (Election Commission Official who will verify if registered users and candidates are genuine or not). This online system of voting is very secure, with a design that is both basic and easy to use. The suggested software is Ethernet-compatible and enables for online voting. It also develops and manages vote and election details, as all users must login with their login information and vote for their preferred candidates. This will enhance India's voting percentage. It will reduce bogus votes by implementing high security.

The goal of this study [2] is to use clever algorithms to comprehend the automated performance of various chatbots. The categorization of text in a chatbot by utilising pattern matching to design, train, and test it aids in the production of the intended result. It allows computers to analyse spoken or written sentences to determine the user's intent. The chatbot's architecture and design process are investigated in order to fully understand how chatbots interact with humans.

Chatbots powered by artificial intelligence (AI) aid in better decision-making. A chatbot's benefits, drawbacks, and several additional applications are discussed.

The authors of paper [3] discuss how a chatbot acting as a real conversational partner is built to understand a definitive human response. It is challenging to gather accurate information while recruiting the suitable candidate in today's society. A chatbot could be a simple answer to this problem. Recruiters can utilise this to automate moment tasks in their daily lives.

The poll showed that new groupware solutions with enhanced user support should be adopted, according to Paper [4]. The V-ROOM system, which is now in development, will make use of artificial intelligence

components and will be designed and implemented with the user in mind.

The upgraded version for VROOM is designed to aid rather than replace participants. Pre-meeting duties such as intelligent group composition and agenda setting, as well as post-meeting chores such as meeting minutes summarisation and live meeting activities such as automated search and document retrieval, will be enabled. Because artificial intelligence, while beneficial, cannot be relied on in the same manner as a human brain when faced with infinite possible performance scenarios, it is critical to utilise technology to support people rather than to replace them. Furthermore, extensive social research on the usage of machine learning and people's views when a software entity communicates on their behalf is required. A web-browser implementation, on the other hand, is a way for avoiding operating system compatibility concerns and allowing for a more accessible system because end users do not need to install anything.

The dataset in Paper [5] comprises of 13 connected words and 14 continuous words recorded by 7 male and 7 female speakers, and the system is trained using a total of 29 words. The recognition accuracy for connected and continuous words is calculated, as well as the total recognition rate for linked and continuous speech using the MFCC and HMM model.

## III. PROBLEM STATEMENT AND OBJECTIVE

### A. Problem Statement

The necessity for a proper platform has grown in tandem with the increase in competitiveness. We created this project to assist students who are studying for a variety of competitive tests that need math and aptitude. The Mathematics Club initially had some difficulties conducting webinars, organising tests, and sending study materials to the kids who actively engaged. As a result of our analysis of these scenarios, we have decided to create a platform where we can collectively gather all of them. We decided to create a meeting platform for scheduling webinars, as well as a face and voice recognition application for quizzes. Students must visit several websites for materials, mock examinations, and other resources in order to prepare for any exam. This project was created with the needs of students and the club in mind, and it will function as a one-stop shop.

### B. Objectives

- Electing the club members,
- Conducting exams,

- Providing study material,
- Virtual meet,
- Reaching New students

**IV. FLOW CHART**

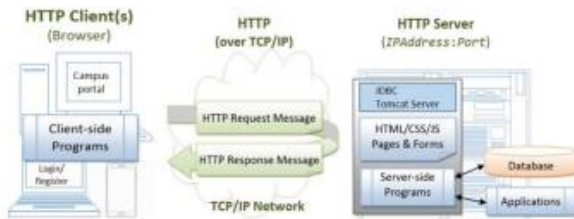


Figure 1: System Architecture Diagram

**V. ARCHITECTURE**

This web application will assist the Mathematics Club or students in a variety of ways in preparing for various examinations. The club would be able to hold elections, organise mock tests, and provide high-quality study materials in one convenient location. Instead of roaming around multiple websites, students should be able to access it all in one area. Students may easily navigate the site with the help of the a chatbot or even contact the forums bodies if necessary. Students will also receive updates on recent changes in competitive tests and have the opportunity to explore blogs, which will help the club expand. The club can also use this web tool to host webinars and hold meetings. This Webservice will also assist the club in conducting online examinations to monitor students' progress and assist with the same as the organization focuses on competitive exam preparation. Overall, every user will have a pleasant and simple experience on our site.

**VI. PROPOSED WORK**

Students can fill in their login details on the suggested all-purpose site, which are then matched with previously recorded data in a database collected from registration records.

- The voting system is easier to use because all users must log in with their password and then click on their preferred candidates/groups to vote. It provides enough security, lowering the number of false votes.
- Face and voice recognition will be used to monitor each student during the exam session. During the exam, facial information will be linked to see whether any form of

cheating is taking place. Admin will have permission to make modifications to the exam.

- Students should be able to access the blog page as well as study materials by just clicking on the navbar button.
- There will also be a separate section where you can download the certificate.
- A chatbot will be available to assist the learner if any difficulties arise.
- The admin will have permission to make simple modifications to the sites.

This software can be used by math clubs to manage their events in a variety of ways. Quizzes can be run efficiently and without interruption by the club. Webinars will be organised using a meeting tool. Face and voice recognition will be used to conduct fair examinations so that we can determine whether or not pupils used unfair techniques. A chatbot will be available to assist the student. Face and voice recognition will be used to monitor each student during the exam segment. During the exam, facial data will be linked to see whether any form of cheating is taking place. Admin will have permission to make modifications to the exam. Students can fill in their login credentials on the suggested all-purpose site, which are then matched with previously recorded data in a database collected from registration records. The voting system is easier to use because all users must log in with their username and password and then click on their preferred candidates/groups to vote. It provides enough security, lowering the number of false votes. Students will be able to access the blog page as well as study materials by just clicking on the navbar button. There will also be a separate section where you can download the certificate.

**VII. MODULES :**

**1)ADMIN SECTION :-**

- Update / delete / edit study material
- Update / delete / edit events, blog page, and general information
- Upload / delete questions for examination
- Upload result of exams
- Manage Students profile.
- Db access.

## 2) CHAT BOT :-

Already Saved Questions & Answers (For questions not answerable by chatbot, it will show contact details of club)

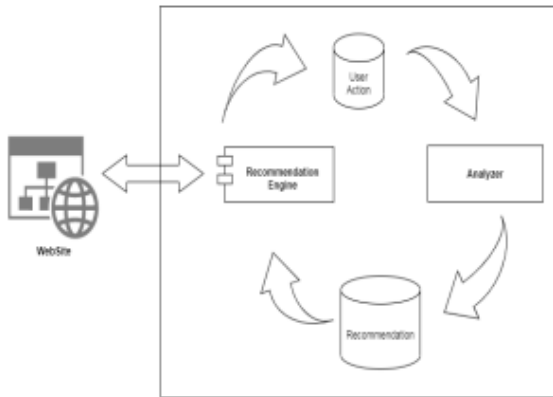


Fig 2: Working of Chat Bot

## 3) USER :-

- Login / Register
- Access to the study Material once you login
- Give exams
- Checking Result

## 4) EXAM SECTION :-

- Login / Registration using unique id to each students
- MCQ, MSQ, NAT type questions
- Capture photo

## 5) HOMEPAGE :-

- Scrolling Webpage
- Slide show of photos (vision, mission, objective)
- Contact us (Social media links , Mail id, Location)
- Chat bot
- FAQ
- Events
- About us ( Details of Mathematics Club members)

## 6) STUDY MATERIAL SECTION:-

- Sections for Different Subjects
- Not downloadable

### A. Details of hardware and software

#### Hardware Requirements:

- Hard disk – 500 GB
- System – I5 Processor
- RAM-4 GB

#### Software Requirements:

- LANGUAGE –
- Python
- Java

#### FRONT END: HTML, CSS

- APP- Java
- Web – python
- Database – SQLite
- Framework – flask

## VIII. OUTPUTS

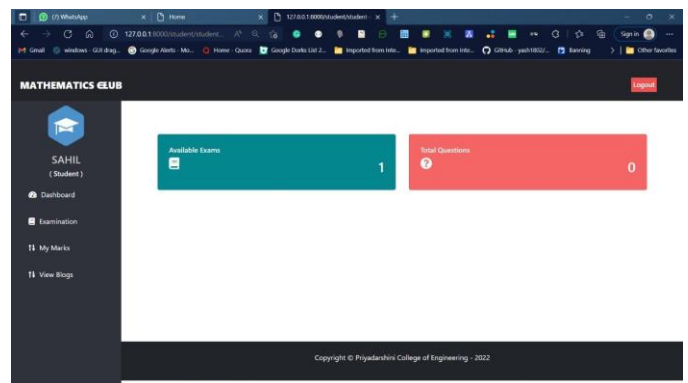


FIG 1 STUDENT MODULE

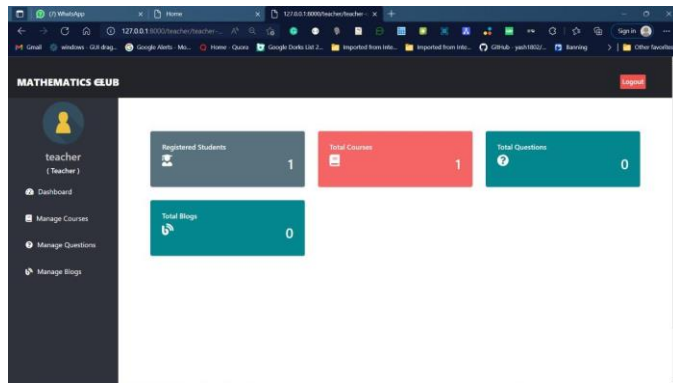


FIG 2 TEACHER MODULE

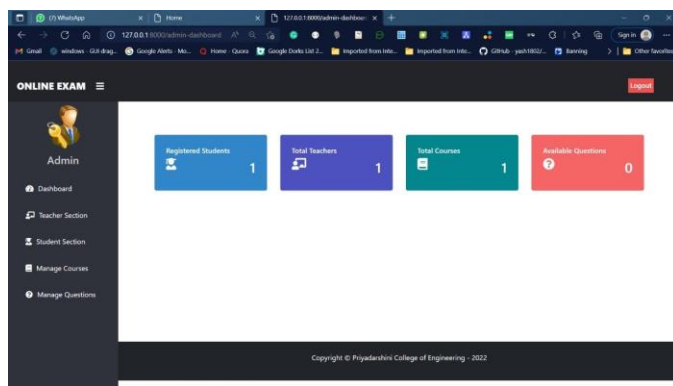


FIG 3 ADMIN MODULE

**IX. FUTURE WORK**

Additional research can be carried out, as demonstrated below:

- 1) Proposals based on web apps that are used to interface with other tools and systems, such as a learning management system (LMS).
- 2) Conducting future studies to encourage the adoption of more online applications that are compatible with LMS for teaching other courses and achieving other educational goals.
- 3) Conducting future research to examine learners' technological efforts and develop appropriate ways to

promote this mindset through familiar programming interfaces.

**X. CONCLUSION**

Education is the most important aspect in contemporary advanced and digital world. Most educational institutes are now understaffed and have little exposure to current technologies and trends. As a result, students have a difficult time keeping up on the latest technologies on the market. Web-based college administration solutions are merely a first step. Students and faculty would be the system's users. The main concept behind this system is to give students and faculty with a portable environment. We adamantly believe that many universities and colleges' existing unidirectional systems, i.e., from faculty to students, should be replaced with a bidirectional system, i.e., from student to faculty.

**XI. REFERENCES**

- [1] K. P. Kaliyamurthie, R. Udayakumar, D. Parameswari and S. N. Mugunthan, "Highly Secured Online Voting System over Network," in Indian Journal of Science and Technology | Print ISSN: 0974-6846 | Online ISSN: 0974-5645.
- [2] International Journal of Emerging Technologies and Innovative Research (www.jetir.org), ISSN:2349- 5162, Vol.7, Issue 5, page no.1153-1159, May-2020
- [3] Akash Balachandar, Anusha D Kulkarni 2018. Recruitment Chatbot. International Research Journal of Engineering and Technology (IRJET), Volume: 05, Issue: 08.
- [4] A Virtual Meeting System for the New Age: Antonios G Nanos, Anne E James, Distributed Systems and Modelling (DSM) Research Group, Faculty of Engineering and Computing Coventry University, Priory Street, Coventry, CV1 5FB, U. K.
- [5] Automated Speech Recognition System –Manjutha M [1], Gracy J [2], Dr P Subashini [3], Dr M Krishnaveni [4] Department of Computer Science Avinashilingam Institute for Home Science and Higher Education for Women Coimbatore, Tamil Nadu, India